Duration : 2 Hours	Marks : 60

Instructions: 1) Figures to the right indicate Full Marks.
2) All Questions are compulsory.

Q.1.A) Define the following in not more than 20-30 words: **5X1=05**
    a. Waterfall Model
    b. Burndown Chart
    c. Prototype
    d. Version Control
    e. Agile Framework

Q.1.B) Match the Following and Rewrite the Matched Pairs : **5X1=05**

1. Verification	A. Ensures that the software application does not crash and remains stable with invalid data inputs
2. Black Box Testing	B. Requirements are checked if implemented correctly
3. Regression Testing	C. Ensures that each and every decision making point and its possible outcomes have been tested at least once with different input parameters.
4. Negative Testing	D. Checking if previous features work properly, even after a new feature is added or updated
5. Branch Coverage	E. Mechanism to check if ,for a given input, the output is correct.

Q.2. Answer the following:

a) Mention two characteristics of a good software. **02**

b) Describe the Spiral model and specify one of its advantages. **03**

c) Explain five types of environments in Build and Release Infrastructure. **05**

Q.3. Answer the following:

a) Describe Agile Manifesto. 02

b) Write two user stories for an Online Shopping Application. 03

c) Illustrate in detail, the Life Cycle of Scrum Framework. 05

Q.4. Answer the following:

a) What is a Daily Standup meeting in Scrum? 02

b) Explain the three pairs in Pair Programming. 03

c) Illustrate the role played by each type user , who is involved in software development using Scrum. 05

Q.5. Answer the following:

a) State the purpose of code refactoring. 02

b) Discuss the importance of Pair Programming. 03

c) Determine the User Story Points for each of the below User Story and justify the same.: 05
(Reference : 1 means Least effort , 3 means medium effort and 5 means most effort required. The below User Stories are for Mobile app for product maintenance.(Product could be an electronic gadget)

(a) As a user, I want to upload an image of error encountered to find a solution more quickly.

(b) As a user I want to be able to edit my product's working details so that i can maintain the history of usage statistics.

(c) As a user I want to receive notifications and reminders for my product servicing so that I can use the product more efficiently.

Q.6. Answer the following:

a) State one point of difference between Static testing and Dynamic testing.   02

b) Discuss two benefits of Devops.   03

c) Construct a control flow graph and compute the Cyclomatic Complexity for the following code: 05

```
X = 10
  IF X > Z THEN
    X = Y
  ELSE
    X = Z
  ENDIF
Print X
Print Y
Print Z
```